

MULTI-LAYER CERAMIC CHIP VARISTOR DEVICE SURFACE INSULATION METHOD

ABSTRACT OF THE DISCLOSURE

Disclosed is a method for insulating external surfaces of a multi-layer ceramic chip varistor device, wherein a high insulating material is coated on external surfaces of the device before the device's external electrodes are plated in an electroplating process. Then after a heat treatment process, the high insulating material reacts with the device's ceramic body surface material to form an insulating layer. A conventional electroplating process for chip devices can be applied to plate the device's external electrodes with a layer of soldering interface so that the external electrodes have a better solderability. The insulating layer protects the device's ceramic body from being plated and the external electrodes are not short-circuited to cause device failure. In addition, if coating the insulating layer is performed before the device's external electrodes are formed, the insulating layer may obstruct a good electric contact to be established between internal electrodes originally exposed out of the ceramic body and the subsequently formed external electrodes. A dip etching method and a heat treatment method are employed to extend the internal electrodes outward so that a good electric contact between the internal and external electrodes is ensured.